

# Science Toolkit: Grade 8 Objective 1.C.1.d

Student Handout: Science: Grade 8 Objective 1.C.1.d

Standard 1.0 Skills and Processes

Topic C. Communicating Scientific Information

Indicator 1. Develop explanations that explicitly link data from investigations conducted, selected readings and, when appropriate, contributions from historical discoveries.

Objective d. Criticize the reasoning in arguments in which

Fact and opinion are intermingled

Conclusions do not follow logically from the evidence given.

Existence of control groups and the relationship to experimental groups is not made obvious.

Samples are too small, biased, or not representative.

Selected Response (SR) Item

Question

Use the information below to answer the following:

## Making a Volcano

Students made a model of a volcano using a tray, a small paper cup, clay, baking soda, food coloring, dish soap, and vinegar (acetic acid). First, they placed the paper cup on a large tray and covered the cup with clay to make it look like a volcano. Then, the students placed 10 grams of baking soda into the cup. Next, they added five drops of both food coloring and dish soap to 30 milliliters of vinegar. Finally, the students poured the vinegar mixture into the cup.

Immediately, bubbles and foam erupted from the model volcano. The students observed the model and recorded their observations of the changes in the substances that made the model volcano.



A student repeated the investigation. However, nothing happened in the volcano model. The student concluded that baking soda and vinegar do not react chemically.

The student would make a more informed conclusion by performing the investigation with

- A. multiple trials
- B. different kinds of vinegar
- C. controlled temperature conditions
- D. greater amounts of baking soda and vinegar

Correct Answer

A. multiple trials

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